

## Montana Board of Oil and Gas Conservation Environmental Assessment

**Operator:** Enerplus Resources (USA) Corporation  
**Well Name/Number:** Bullwinkle-Yahoo No. 4-1-HSU  
**Location:** NE NE Section 4 T23N R57E  
**County:** Richland, MT; **Field (or Wildcat)** Wildcat

### Air Quality

(possible concerns)

Long drilling time: No, 20-30 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig 900-1000 HP, single lateral Bakken Formation development well MD 14,754' and 10,471' TVD.

Possible H<sub>2</sub>S gas production: Slight

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Existing pipeline for gas in the area.

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### Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string casing hole will be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with invert oil based drilling fluids. Surface casing hole to be drilled with freshwater and freshwater mud.

High water table: No high water table at this location.

Surface drainage leads to live water: No, closest ephemeral drainage is an unnamed tributary drainage to the Lone Tree Creek, northwest corner of this location abuts this drainage at this location. Within Lone Tree Creek are stock ponds.

Water well contamination: No, all water wells close by are between 60' and 361' in depth and are shallower than 2030' surface casing setting depth. Closest water well is about 3/8 of a mile to the southwest from this location. The other water wells are 5/8 of a mile to the southwest and 1/2 of a mile to the north from this location.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 2030' of surface casing will be set well below freshwater zones in adjacent water wells and also, covering Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater drilling fluids. Adequate surface casing and operational BOP equipment will prevent problems.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings required.

High erosion potential: No, location has a small cut of 4.2' and small fill of up to 9.1', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 430'X300'.

Damage to improvements: Slight, surface use appears to be hay fields.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other \_\_\_\_\_

Comments: Access will be over existing county roads and existing well access roads. About 0.1 of a mile of new access is proposed to be built to access this location from the existing well access road.. Oil based invert muds will be recycled and cuttings will be buried in a lined pit. Any excess fluid left from drilling and completion operations in the reserve pit will be hauled to a commercial Class II disposal. Pit will be allowed to dry and subsoil clays mixed with the cuttings. No concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1/2 of a mile to the north and 1.25 mile to the southwest from this location. Midway Community Center is about 1.5 miles to the northeast from this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered by the USWS are the Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: \_\_\_\_\_

Comments: Private surface lands. No concerns.

### Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

   avoidance (topographic tolerance, location exception)

   other agency review (SHPO, DSL, federal agencies)

   Other: \_\_\_\_\_

Comments: Private surface lands. No concerns.

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### Social/Economic

(possible concerns)

   Substantial effect on tax base

   Create demand for new governmental services

   Population increase or relocation

Comments: Development horizontal Bakken Formation well in this existing spacing unit.

### Remarks or Special Concerns for this site

Development well in an existing 1280 acre spacing unit, Section 4 and 3 T23N R57E. No concerns

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### Summary: Evaluation of Impacts and Cumulative effects

MD 14,754' and 10,471' TVD Bakken Formation horizontal well. No long term impacts expected, some short term impacts are expected with the drilling of this well.

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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/ Steven Sasaki

(title:) Chief Field Inspector

Date: April 30, 2010

Other Persons Contacted:

\_\_\_\_\_

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center website, Richland County water wells

(subject discussed)

April 30, 2010

(date)

USFWS Threatened, Endangered, Proposed and Candidate Species Montana Counties

website \_\_\_\_\_

(Name and Agency)

Threatened or Endangered Endanger species \_\_\_\_\_

(subject discussed)

April 30, 2010 \_\_\_\_\_

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_